



THE PORT AUTHORITY  
OF NY & NJ

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# NOTE

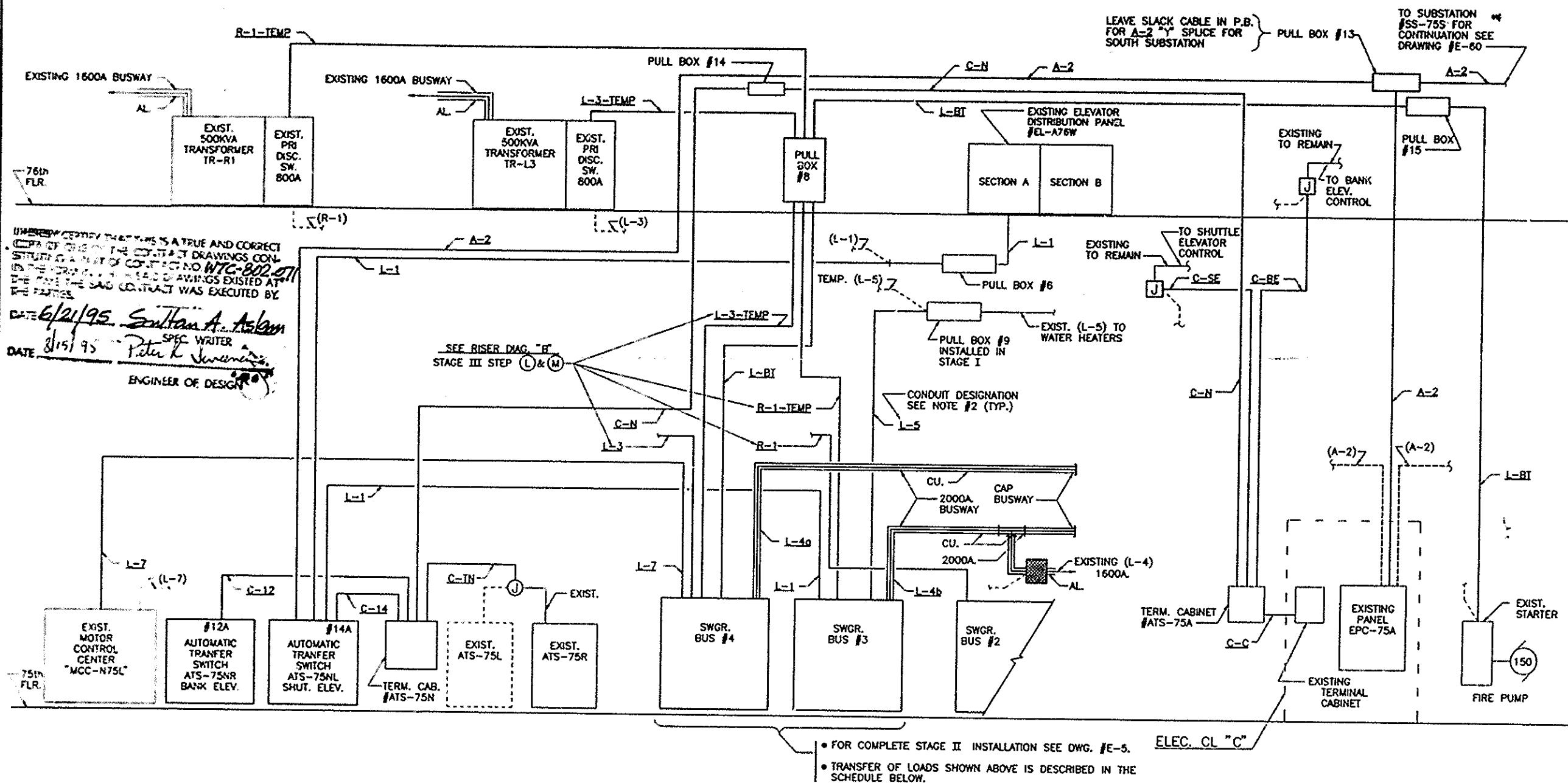
- FOR LEGEND SEE DWG. #E-1, FOR GENERAL NOTES AND ABBREVIATIONS SEE DWG. #E-2.
- FOR NUMBER AND SIZE OF CONDUIT & WIRE SEE:  
• DWG. #E-41 - CONDUIT AND CABLE SCHEDULE  
• DWG. #E-98 - A.T.S. CONNECTION DIAGRAM
- SHUTTLE ELEVATORS #12, 14, 16, 18, 20, & 22 WILL BE WITHOUT POWER DURING THIS OUTAGE. SHUTTLE ELEVATORS #13, 15, 17, 19, 21 & 23 FED FROM SUBSTATION SS-75N WILL PROVIDE SERVICE TO THE 74TH FLOOR LOBBY.
- CONDUIT CABLE AND BUSWAY DESCRIBED IN SCHEDULE STAGE II STEP ① SHALL BE INSTALLED PRIOR TO ENERGIZING BUS #3 & 4.
- SCHEDULE STAGE III STEP ① & ② SHALL BE INSTALLED WITH SWITCHGEAR ENERGIZED.
- ALL ELECTRICAL OUTAGES SHALL BE PERFORMED OUTSIDE NORMAL BUILDING OPERATING HOURS. SEE SPECIFICATIONS DIVISION 1 ENTITLED "CONDITIONS AND PRECAUTIONS" FOR DESCRIPTION OF ELECTRICAL POWER OUTAGE CATEGORIES.

(SEE NOTE #5)

## SCHEDULE STAGE III STEP ① & ② TRANSFER LOADS L-3 & R-1

- L-3 208/120V TRANSF. ELEC. CLOS. "N" 59-74th FLR'S.**
- INSTALL TRANSFORMER "L-3" WITH CB-L3.
  - INSTALL L-3 CDT & WIRE FROM SWGR. BUS #4 TO TRANSF. "L-3". (CONNECT AT TRANSF.)
  - INSTALL BUSWAY L-3g FROM CB-L3, END AT BUSWAY
  - REMOVE EXIST. BUSWAY TO EXIST. TRANSF. "L-3".
  - INSTALL BUSWAY TRANSITION BOX ON EXIST. BUSWAY & CONNECT BUSWAY L-3g.
  - DISCONNECT EXIST. FDR. L-3-TEMP AND CONNECT FDR. L-3 AT SWGR. (ENERGIZE)
  - REMOVE EXIST. TRANSF. L-3, DISC. SW. AND FDR. (L-3-TEMP) TO SWGR.
- R-1 208/120V TRANSF. ELEC. CLOS. "N" 77-93rd FLR'S.**
- INSTALL TRANSFORMER "R-1" WITH CB-R1.
  - INSTALL R-1 CDT & WIRE FROM SWGR. BUS #2 TO TRANSF. "R-1". (CONNECT AT TRANSF.)
  - INSTALL BUSWAY R-1g FROM CB-R1, END AT BUSWAY
  - REMOVE EXIST. BUSWAY TO EXIST. TRANSF. "R-1".
  - INSTALL BUSWAY TRANSITION BOX ON EXIST. BUSWAY & CONNECT BUSWAY R-1g.
  - DISCONNECT EXIST. FDR. R-1-TEMP AND CONNECT FDR. R-1 AT SWGR. (ENERGIZE)
  - REMOVE EXIST. TRANSF. R-1, DISC. SW. AND FDR. (R-1-TEMP) TO SWGR.

LOAD OUTAGES - SEE NOTE #8  
\* = CATEGORY "A" OR "B"



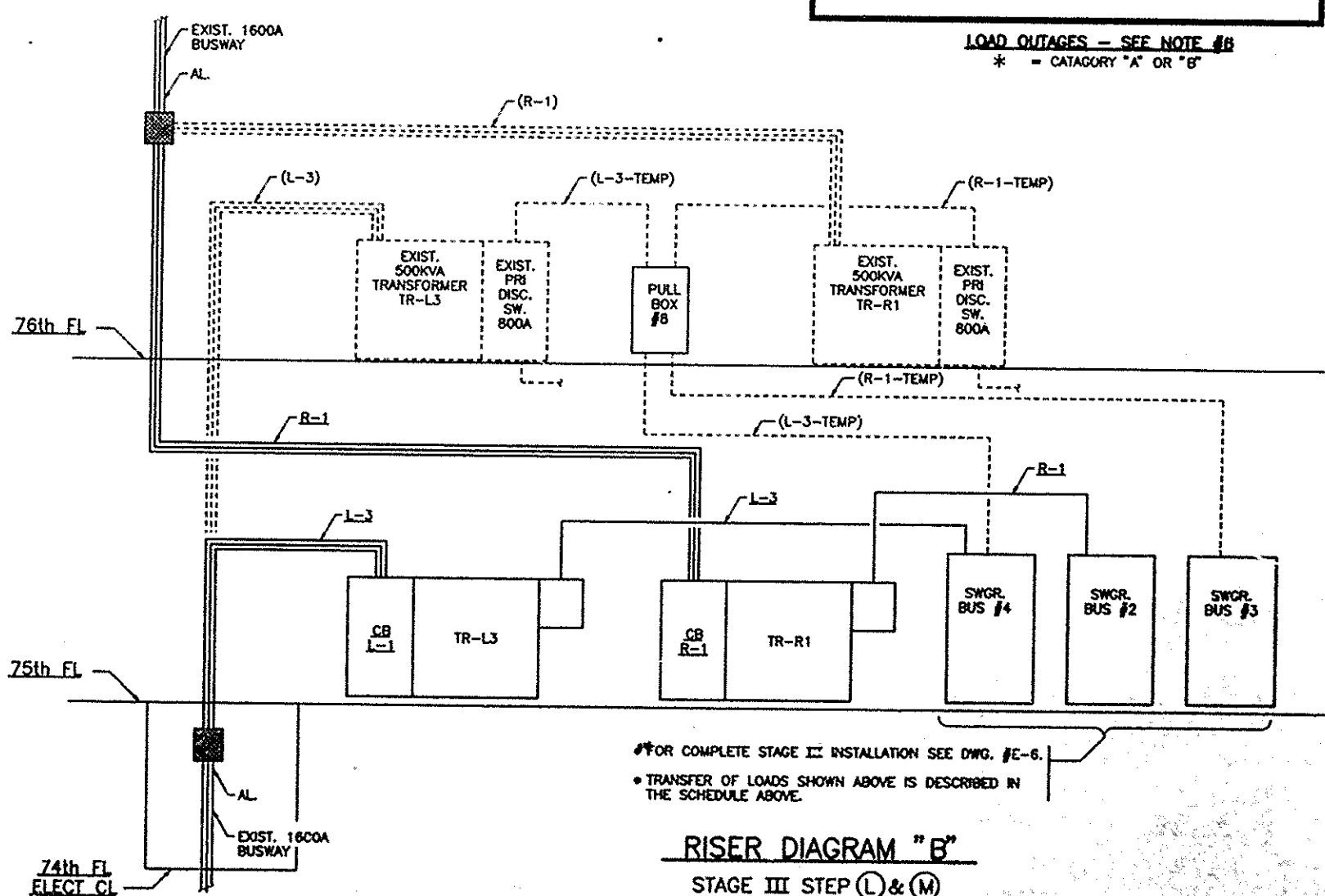
### RISER DIAGRAM "A"

STAGE II STEP ① - DWG #E-5  
EXCEPT AS NOTED

## SCHEDULE STAGE II STEP ① - TRANSFER LOADS TO BUS #3 & 4.

- CONDUIT DESIGNATION - SHUTTLE ELEVATORS -
- CONTROL FOR SHUTTLE & BANK ELEVATORS
- CDTS # C-12, C-14, C-16, C-18, C-20, C-22, C-24, C-26, C-28, C-30, C-32, C-34, C-36, C-38, C-40, C-42, C-44, C-46, C-48, C-50, C-52, C-54, C-56, C-58, C-60, C-62, C-64, C-66, C-68, C-70, C-72, C-74, C-76, C-78, C-80, C-82, C-84, C-86, C-88, C-90, C-92, C-94, C-96, C-98, C-100
- a. - INSTALL C CDT & WIRE FROM SHUTTLE & BANK ELEVATOR TRANSFER SWITCHES, AS SHOWN ABOVE ON DWG #E-98 LEGEND -
- b. - CONNECT ALL CONTROL WIRE AS SHOWN ON DWG #E-98 LEGEND -
- L-1 NORMAL FEEDER TO SHUTTLE ELEV.**
- a. - INSTALL L-1 CDT & WIRE FROM SWGR. BUS #3 TO TRANSFER SWITCH
- b. - INSTALL CDT, L-1 FROM TRANSFER SWITCH TO POINT OF CONNECTION TO EXIST. CDT.
- c. - REMOVE EXIST. FDR. (L-1) FROM PNL EL-A-76W BACK TO EXIST. SWGR.
- d. - CUT EXIST. CDT. (L-1) & REMOVE TO EXIST. SWGR.
- e. - MAKE CONNECTION TO EXIST. CDT. AND INSTALL FEEDER FROM TRANSFER SWITCH TO PANEL EL-A-76W VIA P.B. #8 (ENERGIZE)
- A-2 EMERG. FEEDER TO SHUTTLE ELEV.**
- a. - INSTALL A-2 CDT & WIRE FROM TRANSFER SWITCH TO EXIST. PANEL #EPC-75A, VIA P.B. #13.
- b. - DISCONNECT EXIST. & CONNECT FDR. (A-2) AT PANEL. (ENERGIZE) - NOTE: A-2 RUN TO EXIST. SUBSTATION SS-75S TO REMAIN.
- c. - DISCONNECT EXIST. & CONNECT CONTROL WIRING DESIGNATED (A) ON DWG. #E-98
- d. - REMOVE EXIST. FDR. (A-2) BACK TO EXIST. ELEV. TRANSFER SWITCH.
- L-BT FIRE PUMP**
- a. - INSTALL L-BT CDT & WIRE FROM SWGR. BUS #4 TO FIRE PUMP CONTROL CABINET, VIA P.B. #8 & 15
- b. - DISCONNECT EXIST. & CONNECT FDR. (L-BT) AT FIRE PUMP CONTROL CABINET. (ENERGIZE)
- c. - REMOVE EXIST. FDR. (L-BT) BACK TO SWGR.

- L-5 HOT WATER HEATERS**
- a. - INSTALL L-5 CDT & WIRE FROM SWGR. BUS #3 TO P.B. #9.
- b. - DISCONNECT TEMPORARY & CONNECT FDR. L-5 IN P.B. #9. (ENERGIZE)
- c. - REMOVE TEMPORARY FDR. L-5 BACK TO SWGR.
- L-7 MOTOR CONTROL CENTER - MCC-N-75L**
- a. - INSTALL L-7 CDT & WIRE FROM SWGR. BUS #4 TO MCC-N-75L.
- b. - DISCONNECT EXIST. & CONNECT FDR. L-7 AT MCC-N-75L (ENERGIZE)
- c. - REMOVE EXIST. FDR. & CDT. L-7 BACK TO SWGR.
- L-3-TEMP 208/120V TRANSF. ELEC. CLOS. "N" 59-74th FLR'S.**
- a. - INSTALL L-3-TEMP CDT & WIRE FROM SWGR. BUS #4 TO 500KVA TRANSFORMER VIA P.B. #8.
- b. - DISCONNECT EXIST. & CONNECT FDR. L-3-TEMP AT TRANSFORMER (ENERGIZE)
- c. - REMOVE EXIST. FDR. (L-3) BACK TO SWGR.
- R-1-TEMP 208/120V TRANSF. ELEC. CLOS. "N" 77-93rd FLR'S.**
- a. - INSTALL R-1-TEMP CDT & WIRE FROM SWGR. BUS #3 TO 500KVA TRANSFORMER VIA P.B. #8.
- b. - DISCONNECT EXIST. & CONNECT FDR. R-1-TEMP AT TRANSFORMER (ENERGIZE)
- c. - REMOVE EXIST. FDR. (R-1) BACK TO SWGR.
- L-4a 480/277V ELEC. CLOS. "N" 59th TO 74th FLR'S**
- a. - INSTALL BUSWAY L-4a FROM SWGR. BUS #3 TO END CAP & "T" TO EXIST. BUSWAY L-4.
- b. - DISCONNECT EXISTING BUSWAY L-4 AND REMOVE BACK TO EXIST. SWGR.
- c. - INSTALL BUSWAY TRANSITION BOX ON EXIST. L-4 BUSWAY & CONNECT BUSWAY L-4a. (ENERGIZE)
- L-4b 480/277V ELEC. CLOS. "N" 59th TO 74th FLR'S**
- a. - INSTALL BUSWAY L-4b FROM SWGR. BUS #4 TO END CAP.



### RISER DIAGRAM "B" STAGE III STEP ① & ②

FOR COMPLETE STAGE II INSTALLATION SEE DWG. #E-6.  
TRANSFER OF LOADS SHOWN ABOVE IS DESCRIBED IN THE SCHEDULE ABOVE.

Engineering Department  
Design Divisions  
The World Trade Center  
Electrical/HVAC  
Upgrade Program

TOWER ONE AND TWO  
LOW VOLTAGE  
SUBSTATIONS  
CONSTRUCTION AND  
INSTALLATION

ELECTRICAL

SUBSTATION SS-75N  
STAGE II & III LOAD  
TRANSFER SCHEDULE  
AND RISER DIAGRAM

No. Date Revision Approved

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

LEAHY/TSCHER  
Designed by LEAHY  
Drawn by A.S.  
Checked by

Date 5-1-95 Scale AS NOTED

Contract Number WTC 802.071  
Drawing Number E-46